

Attorney Docket # 4780-21

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Jörg HEIN et al.

Serial No.: N/A

Filed: Concurrently

For: Connecting Element for Hollow Sections of
Different Cross-Section

BOX: PATENT APPLICATION

Assistant Commissioner for Patents
Washington, DC 20231

PRELIMINARY AMENDMENT

SIR:

Prior to the issuance of a first Office Action and simultaneously with the filing of the present application, please amend said application as follows:

IN THE SPECIFICATION:

Page 1, line 2, insert --BACKGROUND OF THE INVENTION--;

line 21, insert --SUMMARY OF THE INVENTION--;

the paragraph starting at line 22:

In view of the above, the object of the present invention is to produce a middle node, as mentioned previously, involving low tooling costs and, thereby, to reduce the cost of post-production processing. In addition, efforts are made to be able to produce the middle nodes for left-hand-drive and right-hand-drive vehicles using the same tooling.

the paragraph starting at line 35:

According to a further detail of the invention an integral frame bracket or frame hoop may be formed on the outside of one side of the frame, the walls of which frame bracket are aligned with the two parallel neighbouring frame walls. In order to facilitate the joining of this middle node e.g. to a supporting arm projecting out of a vehicle tunnel, two sleeves for bolts are provided in opposite lying corners of the frame or frame bracket on the frame, said sleeves likewise being formed in the extrusion process.

Page 2, line 14, insert --BRIEF DESCRIPTION OF THE DRAWINGS--;

the paragraph starting at line 15:

Fig. 1: a perspective view of a transverse beam with supporting arm and so called middle node as stiffening element for a private car;

Fig. 2: an enlarged section from figure 1;

Figs. 3, 4: cross-sections through different versions of the support arm;

Fig. 5: an enlarged perspective view of the middle nodes shown in figures 1 and 2;

Figs. 6, 8, 10: perspective views of three further versions of transverse beams with middle nodes;

Figs. 7, 9, 11: enlarged perspective views of the middle nodes shown in figures 6, 8 and 10;

Fig. 12: a perspective view of another middle node;

Fig. 13: an end view of the middle node shown in figure 12;

Fig. 14: a front elevation relating to figures 12 and 13;

Figs. 15, 18, 21: perspective views of three further designs of middle node;

Figs. 16, 19, 22: front elevations of the middle nodes shown in figures 15, 18, and 21; and

Figs. 17, 20, 23: end views relating to figures 16, 19 and 22.

line 12, insert --DETAILED DESCRIPTION OF THE
PREFERRED EMBODIMENTS--;

Page 3, the paragraph starting at line 19:

The middle node 20 serves the purpose of providing a transition from the driver-side support arm 14, which is in the form of a hollow section and approximately quadratic in cross-section, to the passenger-side support arm 16 which is aligned with the support arm 14. The passenger side support arm 16 is also a hollow section, the cross-section of which is likewise quadratic and smaller than that of the other support arm 14. In addition, the thickness of the four sheet

walls 17 of the longer support arm 16 is less than the thickness of the walls 15 of the support arm 14 for the driver side. Also the middle node 20 should accommodate this transition in wall thickness onto which the support arms 14, 16 are pushed in direction x.

Page 4, the paragraph starting at line 10:

Provided on the outside, at the free inner corner 28 of the push-fit body 22, is an integral diagonal strip 36 of breadth b_1 which runs to the above mentioned neighbouring, diagonally opposite corner 31_a of the push-fit body 22 where an intervening sleeve 38 for a bolt is situated. The corners 31, 31_a are rounded. A second sleeve 38 for a bolt is provided in the other corner 31_a , parallel to and opposite the sleeve 38 connected to the diagonal strip 36 ; in the installed position both sleeves 38 are aligned with the openings 18 at the upper corners 13 of the support arm 12 to accommodate bolts or connecting elements along with the openings.

the paragraph starting at line 30:

The breadth b of the push-fit body 32_b in frame 30 in figures 8 and 9 is the same as its breadth b_1 ; otherwise, this middle node 20_b is the same shape as the middle node 20 described above in figures 1-5. Middle node 20_c (figures 10, 11) corresponds essentially to middle node 20_b in figures 8 and 9 with an additional frame bracket 40 in the design shown in figure 7.

the paragraph starting at line 36:

Middle node 20_d in figures 12 to 14, of overall height e of approx. 115 mm and a transverse dimension e_1 of approx. 70 mm, exhibits a wall thickness t of 4 mm. Both a corner 31_b of the frame 30 and the diagonal corner 41b of the frame bracket 40 form an angle w of 45° . The same holds for a corner region 23 of push-fit body 22_d . This is integrally formed on a diagonal strip 36 which here is continuous and makes an angle w_1 of 45° with the side wall 32. The overall length n of the middle node 20_d corresponds approximately with its side wall e of approx. 100 mm, the outer height a_1 of the push-fit body 22_a , here 55 mm, its breadth a_2 40 mm.

IN THE CLAIMS:

Please cancel claims 1-11 and add the following new claims:

12. A connecting element for insertion into ends of at least two hollow sections of different cross-section, comprising: a frame with side walls extending in a direction x of insertion; and a push-fit body shape-formed by extrusion on the frame, the push fit body having a smaller cross-section than the frame and containing lengths of the frame side walls.

13. A connecting element according to claim 12, wherein the frame surrounds the push-fit body.

14. A connecting element according to claim 12, wherein the push-fit body forms a corner of the frame.

15. A connecting element according to claim 12, wherein a frame bracket is formed onto the frame on an outer side of one of the side walls.

16. A connecting element according to claim 15, wherein the frame bracket has arms on the frame aligned with parallel side walls of the frame.

17. A connecting element according to claim 12, and further comprising a sleeve for a bolt at two opposite lying corners within the frame.

18. A connecting element according to claim 12, and further comprising a sleeve for a bolt at two opposite lying corners in the frame bracket.

19. A connecting element according to claim 12, wherein the push-fit body is arranged to project out of one side of the frame in the direction of insertion (x).

20. A connecting element according to claim 15, wherein the frame is configured to project on one side in the direction of insertion beyond a plane defined by an outer edge of the frame bracket.

21. A connecting element according to claim 20, wherein on an opposite side of the frame bracket the push-fit body projects beyond a plane defined by the outer edge.

IN THE ABSTRACT:

Please cancel the present abstract and insert the abstract attached on a separate sheet.

REMARKS

The present amendment is submitted prior to the issuance of a first Office Action and simultaneously with the filing of the present application.

With this amendment applicants have amended the specification, cancelled claims 1 to 11 and added new claims 12 to 21, all in an effort to place the application in better condition for examination.

Favorable action on the present application is respectfully requested.

It is believed that no fees or charges are required at this time in connection with the present application; however, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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Dated: January 28, 2002

In the Specification:

Page 1, starting at line 22:

In view of the above, the object of the present invention is to produce a middle node, [of the kind] as mentioned previously, involving low tooling costs and, thereby, to reduce the cost of post-production processing. In addition, efforts are made to be able to produce the middle nodes for left-hand-drive and right-hand-drive vehicles using the same tooling.

starting at line 35:

According to a further detail of the invention an integral frame bracket [resp.] or frame hoop may be formed on the outside of one side of the frame, the walls of which frame bracket are aligned with the two parallel neighbouring frame walls. In order to facilitate the joining of this middle node e.g. to a supporting arm projecting out of a vehicle tunnel, two sleeves for bolts are provided in opposite lying corners of the frame or frame bracket on the frame, said sleeves likewise being formed in the extrusion process.

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Fig. 1: a perspective view of a transverse beam with [support-ing]
supporting arm and so called middle node as stiffening
element for a private car;

- Fig. 2: an enlarged section from figure 1;
- [Fig.] Figs. 3, 4: cross-sections through different versions of the support arm;
- Fig. 5: an enlarged perspective view of the middle nodes shown in figures 1 and 2:
- [Fig.] Figs. 6, 8, 10: perspective views of three further versions of [trans-verse] transverse beams with middle nodes;
- [Fig.] Figs. 7, 9, 11: enlarged perspective views of the middle nodes shown in figures 6, 8 and 10;
- Fig. 12: a perspective view of another middle node;
- Fig. 13: an end view of the middle node shown in figure 12;
- Fig. 14: a front elevation relating to figures 12 and 13;
- [Fig.] Figs. 15, 18, 21: perspective views of three further designs of middle node;

[Fig.] Figs. 16, 19, 22: front elevations of the middle nodes shown in figures 15, 18, and 21; and

[Fig.] Figs. 17, 20, 23: end views relating to figures 16, 19 and 22.

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the installed position both sleeves 38 are aligned with the openings 18 at the upper corners 13 of the support arm 12[, 12_d] to accommodate bolts or connecting elements along with the openings[12, 12_a].

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ABSTRACT OF THE DISCLOSURE

A connecting element for insertion into the ends of at least two hollow sections of different cross-section, in particular in the case of a middle node for an instrument panel transverse beam in automobile manufacture is such that a push-fit body is shape-formed - by way of extrusion of a light weight alloy, plastic or other extrudable material - on a frame with side walls extending in the direction of insertion. The push-fit body is of smaller cross-section than the frame and contains lengths of the frame walls. That frame preferably surrounds the push-fit body which in turn forms a corner of the frame. In addition, the frame may exhibit an integral frame bracket outside one frame side wall whereby the frame bracket walls are aligned with parallel frame walls.